2005 KY Tech Prep Showcase

"The Tech Prep Showcase provided a great opportunity to see what other schools are doing and allowed us to display our projects. Through our work with the Unite to Read Program, we shared our knowledge and skills with elementary students, while our work on the Twin Towers made us sympathetic with those lost and hurt on 9-11. Attending the 2005 Tech Prep Showcase made me proud to be from Rockcastle County."

Claudia Brock - Junior Health Science student and
HOSA vice-president, Rockcastle Co. ATC

The Office of Career and Technical Education hosted the 2005 KY Tech Prep Project Showcase on January 25, 2005 at the Farnham Dudgeon Civic Center in Frankfort, Ky.

The event showcased the advances Kentucky has made through the integration of academic and technical education by way of a series of projects, conceived, constructed and operated by KY Tech Prep programs from across the commonwealth.

Project highlights ranged from a replica of the Twin Towers, an airplane, a dragster and jr. dragster, moon buggies, mock doctor's offices, live radio, a trebuchet, gazebo, Freightliner truck, trolley car, playhouses, bookshelves, infra-red thermography, miniature cars, wooden benches, information technology and more.

"This showcase is a way to promote the Tech Prep program. It illustrates rigorous integration of academic and technical education programs through the many creative and innovative projects our teachers and students have created," said Commissioner Laura E. Owens, Department for Workforce Investment.

Speakers at the showcase included Commissioner Owens, Mardi Montgomery, deputy secretary, Education Cabinet; Representative Danny Ford, KY House District 80 and Dr. David Bond, executive director of the National Tech Prep Network. A taped message from Education Cabinet Secretary Virginia G. Fox was also presented.

The Kentucky Tech Prep program is an educational reform effort that seeks to motivate students to acquire the academic and technical skills necessary to meet the technological challenges of society.

State Representative Danny Ford, in support of the Rockcastle Co. ATC and school district, addresses showcase attendees during the opening ceremony.

"I believe it's only fitting that this project (Twin Towers) demonstrates how an education can bring together all walks of life to hopefully leave this America better for the next generation. I believe that our technical schools are doing just that." Representative Ford

Rockcastle County's tribute to the Twin Towers

The year long project fostered an educational and emotional environment to shape the attitudes of many young students about what it means to be an American. The towers stand as a cornerstone to honor American beliefs, values and ideals.

The two towers, made of aluminum, stand roughly 15 feet high. This is approximately 1/100th of the size of the World Trade Center towers.

Electricity students wired an external lighting source at the base of the structure to shine on the replica during the nighttime. A special granite stone has been engraved with firemen and policemen logos and an American flag as well as the names of those who participated in this worthwhile project.

Ky. Education Cabinet's Deputy Secretary Mardi Montgomery

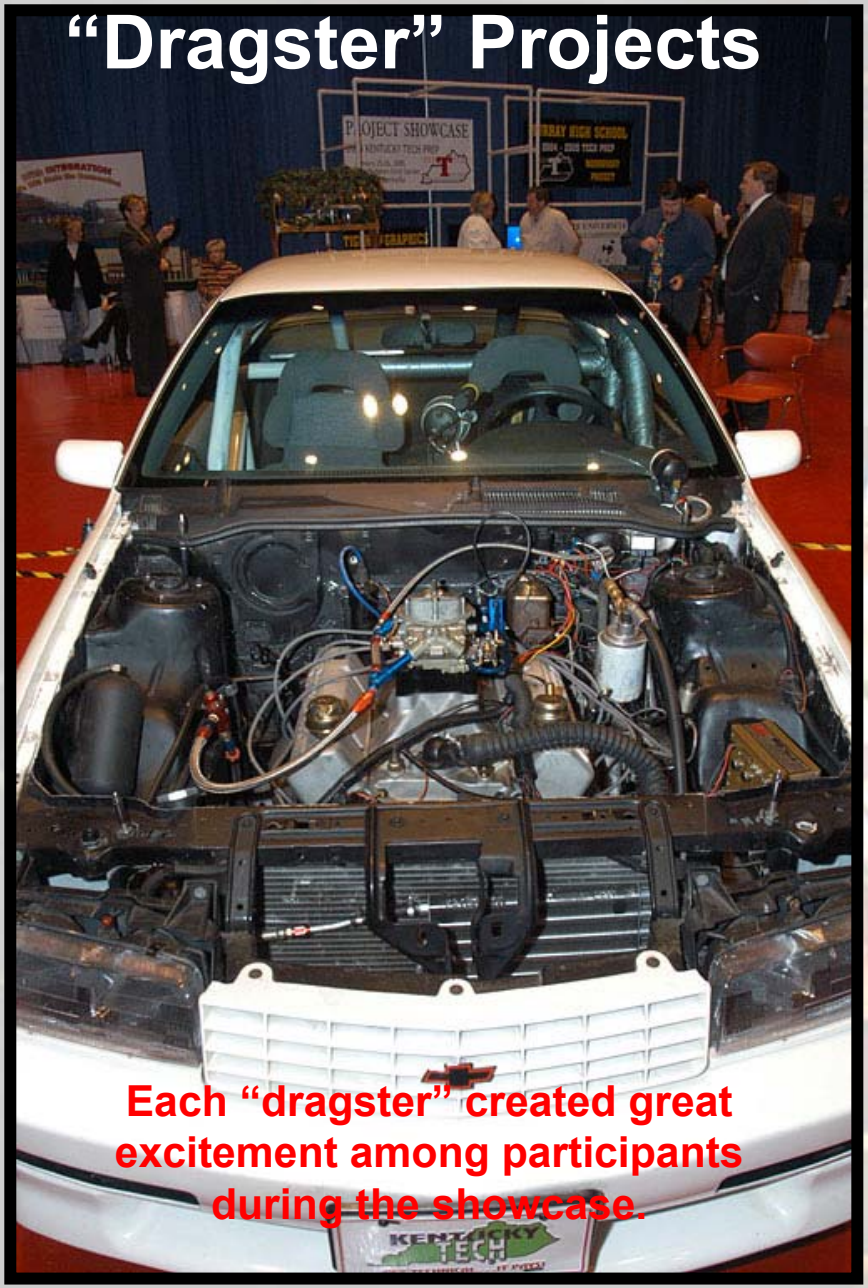
In specifically addressing students during her comments, Montgomery said, "Continue to challenge yourself, continue to step outside the box and take postsecondary and the workplace by storm."

Department for Workforce Investment Commissioner Laura E. Owens discusses a project with Rockcastle Co. High School students.

Montgomery County's "Runway for Applied Academics" project awaits the showcase.

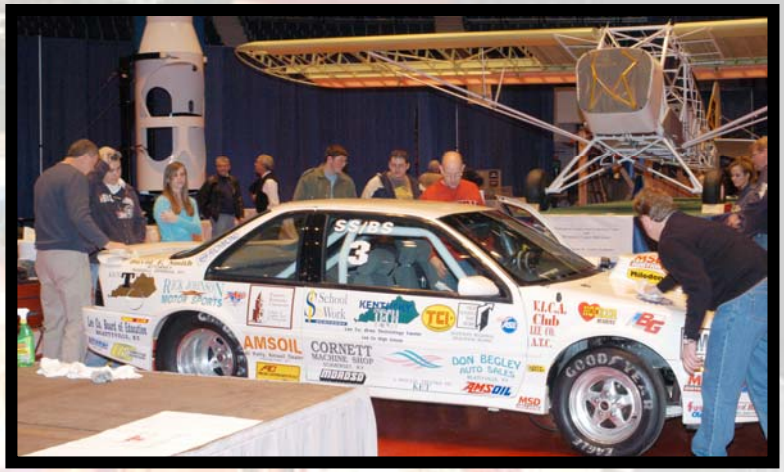
"The showcase gave us a venue to display the airplane our students have worked so diligently on for the past year and a half. It was also a wonderful opportunity for the students to articulate their pride in the work that they put forth on the project. They were happy to personally meet their State Representative Adrian Arnold."
--Montgomery Co. ATC Principal Mike Kindred

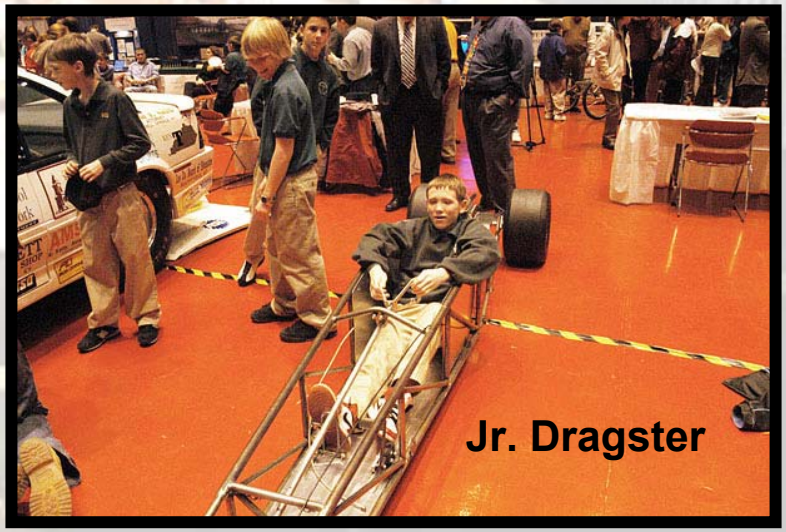
Lee Co. ATC and HS "Dragster" Projects



Each "dragster" created great excitement among participants during the showcase.

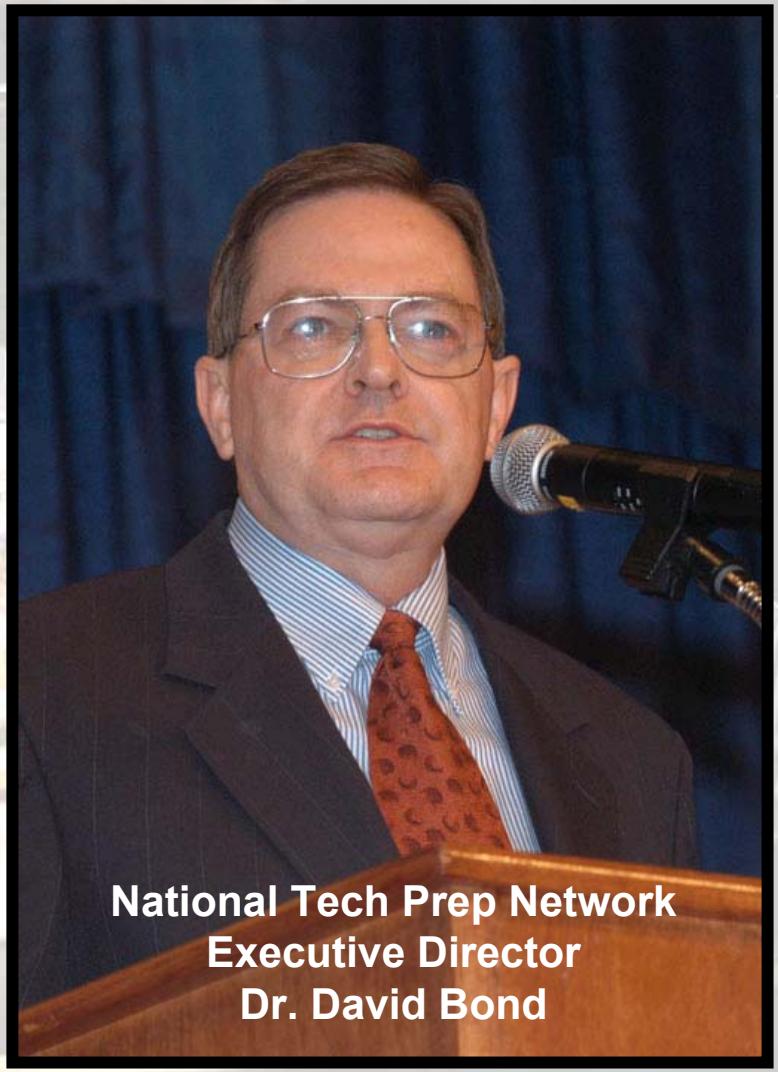
The car was a two year project," says Lee Co. ATC Principal Jerry Hollon. "Students used physics, math and science in addition to their automotive technology program to complete the project."





Jr. Dragster

“Kentucky is one of a handful of states that appropriates state funding to supplement federal programs – and you should be proud of that. Kentucky is obviously aware that the return on investment comes in the form of more successful students; therefore, a better educated workforce leads to an improved economy.”
Dr. David Bond



National Tech Prep Network
Executive Director
Dr. David Bond

State Tech Prep Director Dr. Ahmed Sabie, right, takes to the airwaves via the Owsley County Board of Education/Morehead State University project, WOCS Radio.

Representative Milward Dedman, Jr. (left) took time to visit with and congratulate students on their fine work.

Hughes Jones Harrodsburg ATC and Mercer Co. High School's Moving Water Wall was constructed as an integration project among the welding, electricity, art and math programs. The water wall is 2'X8'X6' and showcases different career cluster symbols. Over $4,000 of copper was used in creating the project.

Shelby Co. ATC/Henry Co. High School's Air Track to demonstrate Newton's Laws for Acceleration and Momentum

Senator Gary Tapp (l) and Representative Brad Montell (r) both took time to visit with Shelby Co. and Henry Co. school faculty, staff and students at the showcase.

"Henry Co. H.S. Physics Teacher Mr. Ray, Shelby Co. ATC Machine Tool Technology Instructor Mike Clark and their students worked together to design the glides for the air track, produce the parts and test the equipment. As the physics class comes up with more ways to use the equipment, our machine tool class will make the necessary modifications that will allow them to conduct different tests."

Debbie Anderson, Shelby Co. ATC principal

"What a wonderful testament to the good things happening with kids, teachers and public education in KY!"

Kricket McClure, Henry County Public Schools assistant superintendent

Casey County's Miniature Automotive Project

Casey Co. staff and students are greeted by their legislator, Representative Jimmy Higdon, during the showcase.

Automotive, science and math classes were integrated into the Casey Co. project.

A replica of Marion County's Connecting Bridge

Marion Co. ATC Principal Howard Carey (l), Tech Prep Coordinator Jayne Hogan (far right) and Marion Co. students had an opportunity to meet with State Representative Jimmy Higdon (2nd from left) at the showcase.

Students had to walk from the high school to the ATC by jumping across water and/or a slick surface. The bridge is a replica of one that was designed and built to solve a drainage problem. Students were given the project including the design, layout, figuring material costs and construction of a fifty-foot bridge from the high school to the ATC.

Monroe County's Healthy Snack Cart

(From left to right) Representative James R. Comer stopped to chat with Monroe Co. Tech Prep Coordinator Robin Hagan, Monroe Co. ATC Wood Technology Instructor Jeff Short and OCTE Deputy Exec. Dir. Lewis Carter.

The cart was an integrated project among the wood working, culinary arts, art and resource math programs. It is being used to provided students with more nutritional alternatives to candy bars, chips, and other high fat, high calorie items in the vending machines.

C.E. McCormick and Gateway's Mock Physicians Office

"My students learned so much from being in the showcase. They were able to practice their skills on real people. They also enjoyed being with the Gateway College students. The peer mentoring that went on was great for all the students. This was a wonderful opportunity for the students to demonstrate their knowledge and obtain new perspectives on real life situations."

--C.E. McCormick Health Sciences Instructor Vickie Rebholz

The Knox County project arrives in Frankfort the day before the showcase. This project began as an effort to bring back a part of Barbourville's history through the replication of building a 1890-1919 street car. Programs involved in the creation of this project included carpentry, computer aided drafting, automotive technology, welding, and electrical technology from the area technology center. Integrated academic programs included history, math and English.

“Belfry’s Heroes of Freedom”

“I’m delighted that our students and teachers had an opportunity to construct such a worthwhile project for this event. The wooden base was created in James Meade’s carpentry class and there are five 8’ aluminum columns attached. A bronze plaque entitled, “Heroes of Freedom” is also part of the base. It’s impressive,” says Belfry ATC Principal Annette Harris-Ward. “Students in Paul Williamson’s machine tool technology program created the flag pole and its base. The base was made from solid brass. We are all proud of the workmanship our students have displayed in the final product and have a great respect for what the memorial means.”

Harrison Co. Covered Bridge

A 12’ wooden bridge replica of their *“South Fork of the Licking River Covered Bridge Project”* was constructed by the carpentry class at the Harrison Co. ATC. It represented a model of the district’s Project Lead The Way national pre-engineering integrated activity.

Boone County's "Freightliner to the Future" project represents an educational partnership between Fyda Freightliner Cincinnati, Inc., the KY Tech Boone Co. ATC and the local school district. It was formed to train and develop a more skilled technician in the field of diesel technology. It was the employees of Fyda who first conceived the idea of creating a partnership with the Boone Co. ATC as a means to honor a fellow employee. Mr. Darren Snow, who lost his life in a motorcycle accident, was a valued employee of Fyda Freightliner. He was also a graduate of the diesel technology program at the Boone Co. ATC. Not only will this program benefit students for years to come, it also recognizes and pays tribute to the memory of a former student.

Boone County's Freightliner to the Future

Carroll County's Orthographic Projection and Infrared Thermography Projects

At left, students researched, designed a blueprint and built a tennis ball launcher as a trebuchet.

Infrared Thermography

Students use the latest technology to detect electrical faults and overheated bearings. The project integrates applied math and industrial maintenance curricula.

Bell County's CPS Demonstration

The Bell County CPS project demonstrated the ongoing effort to keep classrooms on the cutting edge of technology by way of an easy to use keypad response system created as an interaction tool for teachers and students. The wireless devise looks and works in much the same way as a television remote, sending information to a sensor that is connected to the classroom instructor's computer. Working through the supplied CPS software, teachers have the ability to import curriculum for various classroom activities.

J.D. Patton ATC - Kenton County High School's Geodesic Dome Construction

Using basic geometric shapes, a dome was constructed. Two simple triangles - one equilateral and one isometric - both with 10" bases, were designed and built. The triangles were assembled to form geometric shapes: hexagons, pentagons, and trapezoids. The polygons and trapezoids were then connected to assemble the dome. Another dome was then constructed just using the hexagons, pentagons, and trapezoids. Finally, the domes were covered with an exterior skin or oriented strand board. The exercise accomplished three things. Students understood the relationship between triangles and other geometric forms. Basic equilateral and isosceles triangles can be assembled to form other geometric shapes. The shapes depend on the angles inscribed in the triangular. Finally, the area of polygons and trapezoids were determined so the amount of material needed to cover the shape could be accurately estimated.

Floyd County ATC/ Prestonsburg High School's Integration of Carpentry and Geometry Classes to Build Book Shelves

"The most important aspect of Tech Prep is that we are providing kids with an opportunity to experience academic and technical integration using hands-on activities. They are learning and having fun," says Floyd Co. ATC Principal Lenville Martin. "We are all proud of how our students have worked so hard to make the connection between math and carpentry, while at the same time developing a feeling of respect and accomplishment for the end product. These bookcases are first class."

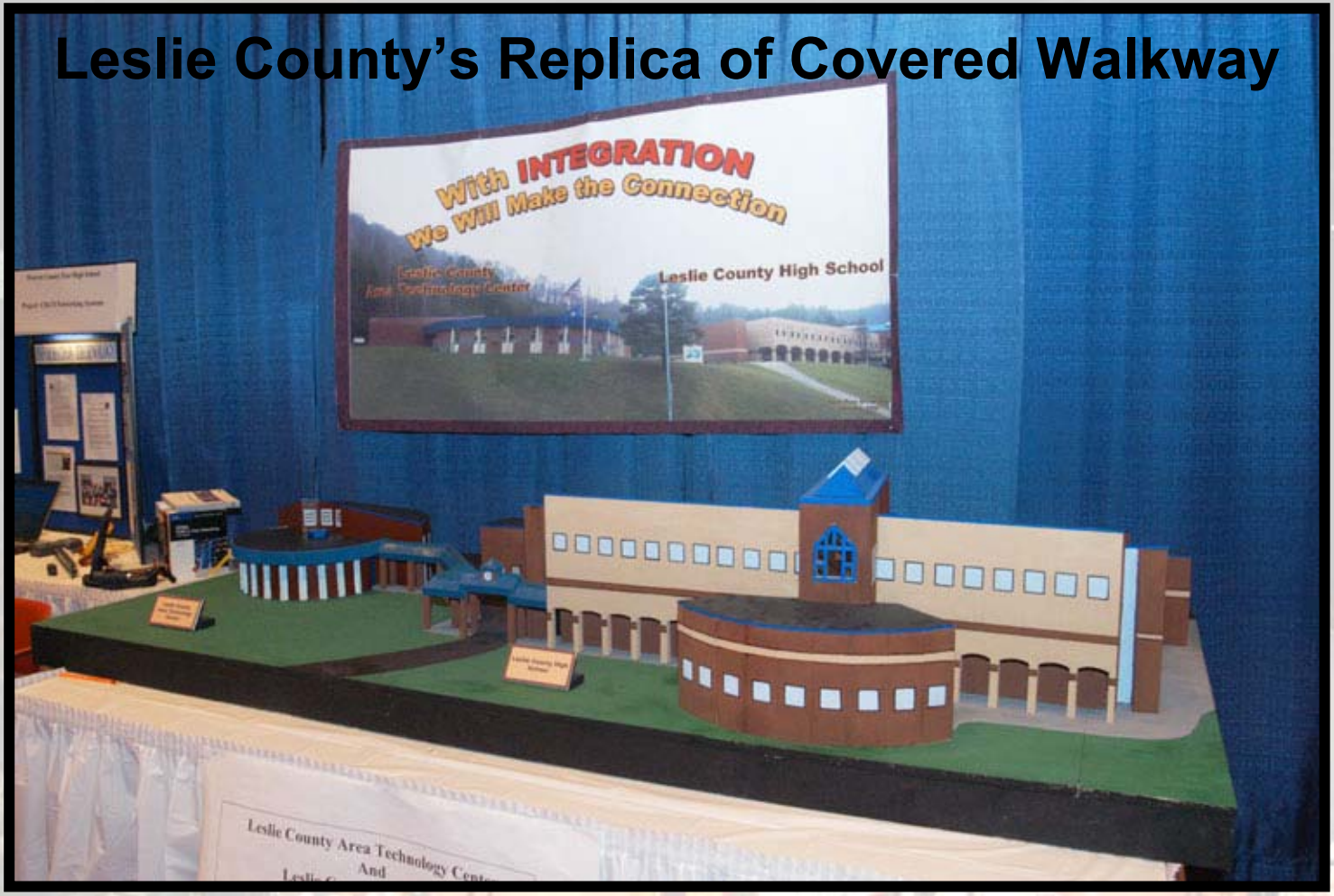
"The integration of carpentry and geometry lends itself to hands on learning and allows students to connect what they have learned in math class to what they have learned at the technical school," says Prestonsburg HS Counselor Karen DeRossett. "This allows them to utilize these concepts into a project that is easily accessible to them in their everyday lives."

Mason County's Frame / Auto Body Rotisserie

This is a metal structure with rotating arms which can be attached to either end of a vehicle's frame or body. The structure allows for a worker to have access to all areas of the frame or body while standing in the same position.

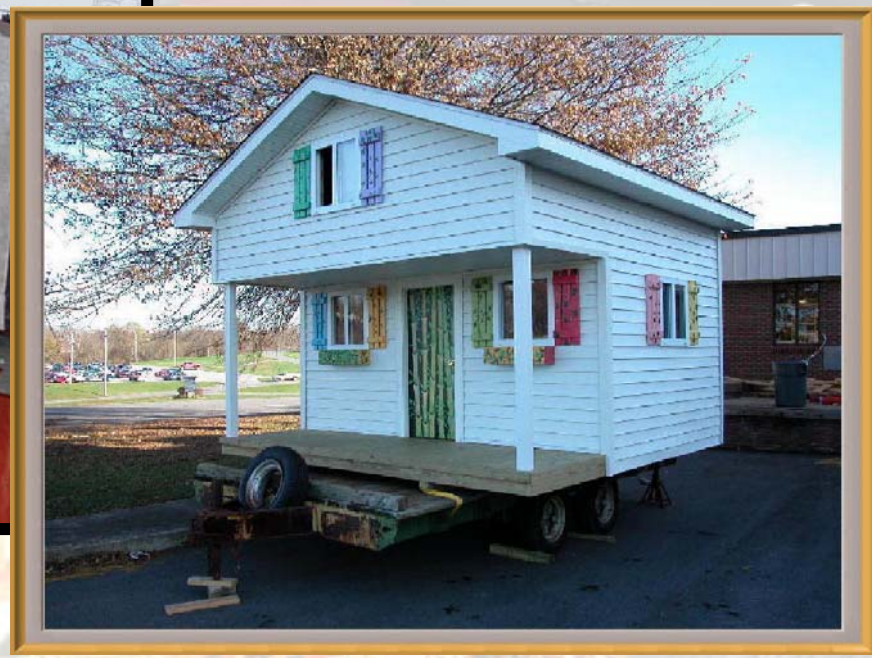
A high school physics class took weight calculations, dimensions and measurements to determine the proper placement of the frame / body and the proper dimensions of the rotisserie. The welding class and machine tool tech class then took the measurements and built the structure. The collision repair class painted the rotisserie. The automotive tech class then placed the frame on the rotisserie.

Leslie County's Replica of Covered Walkway



Several departments (carpentry, art, computer media, physics, and English) worked on the project to design, analyze, and build the scale model. The carpentry class and physics class actually designed and built the scale model. The art class painted the project. The computer media class prepared a PowerPoint presentation of the project and took several digital pictures. The English class was in charge of public relations including the writing of a newspaper article.

Barren County's CASA Playhouse



Students from the Barren Co. Area Technology Center and local high school have come together in a multi-purposed adventure that benefited underprivileged children in the region in the development and construction of their "CASA" House. CASA stands for Court Appointed Special Advocate and is a non-profit organization that helps neglected and abused children who have been through the juvenile justice system by way of appointed volunteers.

Carpentry, electrical technology and computer aided drafting students at the ATC teamed up with art students from the Barren Co. HS to create a two story playhouse that was raffled to benefit the CASA Program. Students in the various ATC classes collaborated to design and construct the playhouse, while those in the high school art classes painted a mural for the interior.

C.E. McCormick ATC/ Pendleton County High School's Gazebo

C.E. McCormick's gazebo project represents collaboration between the carpentry students at the ATC and the geometry class at Pendleton Co. High School. The project was completed on site at the high school and required the students to work as team members during the morning session to complete it in a short time frame. During construction, students were required to make many 45 degree angle cuts and some 22 ½ degree cuts, including compound angles, which presented a challenge for many of the students. This was a great integration project for the students because of its reinforcement of math and geometric formulas the students learned at the high school. The geometry students learned how to use the speed square and framing square. All students needed to understand how to square the various components of the structure and they all were able to participate in the different aspects of the construction process.

The Lincoln County display was actually set up as a two dimensional project known as the Cedar Creek Tourism and Olympics Integration Project. The first phase consisted of the high school media, algebra and geometry classes along with the ATC's machine tool technology, information technology, wood manufacturing technology and industrial maintenance classes working together to create a video of Lincoln County for distribution by the local tourism commission. Then, benches were built for the newly constructed Cedar Creek Lake, welcome signs were created for the entrances into Lincoln County and brochure racks were produced for businesses.

The second phase consisted of integrating math, science, health/P.E. and language arts classes with an Olympics' style theme.

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Good News Story #105
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KENTUCKY TECH *nically Speaking*

For more information regarding the KY Tech Prep Project Showcase, please e-mail Dr. Ahmed Sabie